

ARCADIAN

MICROPROCESSOR CONTROLLED KEYBOARD

The microprocessor controlled keyboard is a state of the art high speed data entry device. This unique keyboard features an 8 character buffer, repeat key and microprocessor based multiple key rollover functions with phantom key lockout. All keys are debounced to prevent unwanted entries. The keyboard has 81 key contacts, a standard QUERY arrangement and the life expectancy per key is 100 million cycles. The switch contacts are front sealed and therefore multidust and vibration have no effect on proper operation. The top row of keys have been customized for the Z-axis computer suite yielding us F1 thru F6 for the serial function keys and four arrow keys for the Z-axis response. Also included in the keyboard is a Z-axis response key. The keyboard has been designed to give the user a positive entry response.

ARITHMETIC PROCESSING UNIT.

The 8231 Arithmetic processor is an integral part of the high speed graphics capabilities and is offered as an option costing several hundreds of dollars on other computers systems. This chip alone increases the speed of the mathematical computations by up to several hundred times and is therefore essential in producing the real time responses needed for complex graphics simulations.

FUNCTIONS:

1. FIXED POINT SINGLE AND DOUBLE PRECISION, (16/32 BIT)
2. FLOATING POINT SINGLE PRECISION, (32 BIT)
3. FULL BINARY DATA FORMATS.
4. ADDITION-SUBTRACTION-MULTIPLICATION AND DIVISION.
5. TRIGONOMETRIC AND INVERSE TRIGONOMETRIC FUNCTIONS.
6. SQUARE ROOTS, LOGARITHMS-EXPONENTIATION.
7. FLOAT TO FIXED AND FIXED TO FLOAT CONVERSIONS.
8. STACK ORIENTED OFF-RAMP STORAGE.

Fortunately all of the above mathematical formulas are executed transparently to the user and are completely controlled by the Z-grass software. This device has been manufactured using the most advanced N-Channel Silicon Gate Technology and therefore is extremely fast and reliable.

2000 BAUD DUAL CASSETTE INTERFACE WITH MOTOR CONTROLS.

The Dual 2000-Baud Cassette Interface is used to store and retrieve programs from a cassette recorder. The system includes 2 separate cassette ports with individual motor controls. Having 2 separate systems allows more complex functions to be easily executed. With the computer controlling the motor-on cassette could be audio instructions while the other is loading programs. This would allow the user to load programs without having to use a lot of tape. The cassette interface can also be used to let the computer start and stop programs, save files or select audio or program data.

5.25 4 CHANNEL FLOPPY DISK CONTROLLER.

[illegible]

POWER SUPPLY FEATURES.

The system power sections include 1 switched 120V 3-prong grounded outlet on the back panel to be used for the Ball/Astrocade unit and 1 unswitched 120V 3-prong grounded outlet on the front panel for the Transformer. This outlet will turn your Ball/Astrocade unit on and off with the Viper Z8000 unit. The front panel on/off switch is illuminated for your convenience and is a good quick reference to make sure you have power on or off.

To eliminate low voltage and power spikes, can a computer to the Viper Z8000 unit. Power lines can cause a computer to malfunction. Inadvertently fail the Viper has a specially designed microprocessor power transformer that is capable of operating at 90% efficiency even when the power lines drop well below 110 volts. To help protect the system from power spikes the Viper also includes a high frequency RFI/EMC line filter with fuse also provides protection against a 60Vv-volt surge protector) for

AUDIO MIXING AND STEREO OUTPUTS.

[illegible]

ANNOUNCING THE ADD-ON, LEVEL THREE, ARCADE.

ALTERNATIVE ENGINEERING CORP.

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THE VIPER-ZGRASS SYSTEM

With over 10 years of custom software development plus the most advanced hardware features ever offered on a home computer, the Video Image Processor is the most powerful and versatile Video Image Processor on the consumer market. This unique system together with the Ball/Airborne Professional Arcade has a total of 8 microprocessing devices including 3 original Ball/Hideout custom arcade graphics processors. Used to make such videogame legends as Pac Man, Galaxian, Invaders, Asteroids, and Asteroids II, the Video Image Processor is the most powerful professional arcade games but is also specially designed for writing them. Z-grass makes it easy to create arcade quality games, video art, graphics and beautiful color images on your TV without having to have years of experience in computer programming.

SYSTEM FEATURES:

1. 64K 200ns DYNAMIC RAM MEMORY FOR PROGRAMMING.
2. 32K CUSTOM Z-GRASS REAL TIME OPERATING SYSTEM.
3. DUAL RS232 BI-DIRECTIONAL COMMUNICATIONS PORTS.
4. 8048 MICROPROCESSOR CONTROLLED KEYBOARD WITH 1K ROM DECODER.
5. OAK F.T.M. 81 KEY COMPUTER DESIGNED KEYBOARD WITH KEYPAD.
6. PIEZO ELECTRIC KEY CLICK FOR AUDIBLE KEYBOARD FEEDBACK.
7. 8231 HIGH SPEED ARITHMETIC PROCESSOR UNIT.
8. DUAL 2000 BAUD CASSETTE INTERFACE PORTS WITH MOTOR CONTROL.
9. 4 CHANNEL DOUBLE DENSITY 5.25 FLOPPY DISK CONTROLLER.
10. RF/EMI FILTER WITH PLUG IN CORD AND BUILT IN FUSE.
11. FULLY REGULATED DC POWER SUPPLIES 5.12V-12V.
12. REAR PANEL JACK FOR REMOTE KEYBOARD OPTION.
13. EXPANDABLE TO HIGH RESOLUTION GRAPHICS (320x204-COLOR)
14. MEMORY EXPANDABLE UP TO 256K WITH THE HIGH RES. OPTION.
15. COMPATIBLE WITH CP/M OPERATING SYSTEMS.
16. STEREO OUTPUT JACKS FOR THE 3 OCTAVE MUSIC SYNTHESIZER.

Z-GRASS THE LANGUAGE.

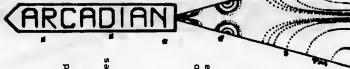
The Z-GRASS software includes these advanced functions:

1. A FULL SCREEN TEXT EDITOR FOR FAST EFFICIENT PROGRAM EDITING.
2. STRING MANIPULATION INCLUDING MATCH-CONCATENATION-REPLACEMENT.
3. PROGRAM EXECUTION IN BOTH INTERPRETED AND COMPILED MODES.
4. MULTI-DIMENSIONAL ARRAYS AND STRING ARRAYS.
5. USER CUSTOMIZATION OF LANGUAGE AT SEVERAL LEVELS.
6. ADVANCED GRAPHICS COMMANDS:
SHRINK-TEXT, ELLIPSE-SNAP-SHOW-ROTATE-SCALE-PATTERN-STRIFE-POINT.
7. 6 USER DEFINABLE KEYS FOR SPECIAL OR REPTITIOUS FUNCTIONS.
8. OVER THIRTY SPECIAL CONTROL KEY COMMANDS WITH MULTIPLE MODES.
This is only a partial list of all the commands that are included in the 32K of Z-GRASS software. It takes over 100 pages of the Z-GRASS manual to describe all the commands and how to use them. Also included in the Z-GRASS manual are 10 lessons in programming with BASIC, FORTRAN, PASCAL, and COBOL. These modules are available on disk, cassette tape, or disk or cassette tape. These user modules allow the user to set new Z-grass commands as they become available.

DUAL RS232 COMMUNICATIONS PORTS.

The RS232-C dual channel communications ports allow your User to communicate with the outside world. These ports can be used with a wide variety of the latest in communications equipment and both channels have independent programmable baud rates (300 to 38.4k baud). The following devices can be used with these ports.

1. PRINTERS, DOT MATRIX OR LETTER QUALITY.
2. BIT PAD GRAPHICS DIGITIZERS.
3. VOICE SYNTHESIZERS.
4. TELEPHONE MODEMS.
5. REMOTE APPLIANCE CONTROLLERS.
6. COMPUTER TERMINALS.
7. OTHER Z-GRASS COMPUTER SYSTEMS.
8. REMOTE KEYBOARDS.



HERE IS ONE PAGE OF THE AVAILABLE COMMANDS:

*GRAPHICS/ ARRAYS:

ARRAY
ARRAY.INT
ARRAY.STR
BOX
CENTER
CLEAR
CLEAR.CRT
CLEAR.WIND
DISPLAY
DISPLAY.SCREEN
DISPLAY.PAN
LINE
PATTERN
PATTERN.FILL
MOVE
MOVE.UP
POINT
POINT.SNAP
POINT.PAN
SCALE
SCALE.SCR
SCALE.PAN
SCROLL
SHRINK
SNAP
STRIP
STRIP.STR
STRIP.OFF
TEXT
WINDOW
WINDOW.BOX
WINDOW.FULL
WINDOW.CENTER

*DISK:

DBAKS
DCREATE
DELETE

(continued)

*DISK:

DDELETE.BAK
DFETCH
DFETCH.ZAP
DGET
DGET.BAK
DGET.OR
DGET.XOR
DGET.FAST
DINIT
DLOAD
DLOAD.CLEAR
DLOAD.SET
DLOAD.ZAP
DLOOK
DPUT
DPUT.TV
DSETUP
DSETUP.RESET
DUSEMAP

*INPUT/ OUTPUT:

CONTROL.P
GETDISK
GETTAPE
INPUT
INPUT.NAME
INPUT.STR
PORT
PRINT
PRINT.FORCE
PRINT.INP
PRINT.CURSOR
PRINT.CEOL
PROMPT
PROMPT.FORCE
PUTDISK
PUTTAPE
RS232
RS232.GET
RS232.PUT

(continued)

*INPUT/ OUTPUT:

RS232.AGET
RS232.APUT
RS232.SGET
RS232.SPUT
RS232.BGET
RS232.BPUT
RS232.RESET
TABLET
TERMINAL

*MATH:

ARCCOS
ARCSIN
ARCTAN
COSINE
EXP
INT
LENGTH.NUM
LN
LOG
POWER
SINE
SQRT
TANGENT

*MISC:

COMPILE
CONTROL
DELETE
DELETE.NULLS
EDIT
LOOPMAX
RESTART

*PROGRAM FLOW:

.B
.F
GOTO
IF
JUMP.ERR
RETURN
SKIP
STOP
TIMEOUT
WAIT

*STRING MAN- IPULATION:

ASCII
LENGTH
LPAD
STRING
STRING.NUM
SUBSTR

*USER INFO:

ADDRESS
ADDRESS.AB
ADDRESS.Z
ANYARGS
CORE
HELP
STATUS
USEMAP
VERSION

What about software (i.e., programs)?

There is a large amount of programming that was created as a result of Dr. Defanti's academic work. The ARCADIAN has been contacting some of his students to determine their interest in providing programs and tutorials. In addition, Viper Engineering is placing the first few machines in the hands of other programmers, to get the software ball rolling. The operating system is essentially the same as has been used in the DATAMAX UV-1, so that programming base can be tapped.

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NEWS
of
Astrocade
!

ARCADIAN

Now that you've read the manufacturer's prose about the Zgrass memory unit, here are a few words of background...

When the Astrocade company went to the courts to seek relief under the bankruptcy statutes last December, the Alternative Engineering people decided that the time had come for a third party to produce the memory addition. We were in a similar frame of mind a couple of years previously, but the planned deal with Fidelity Electronics gave us pause (of course, that fell through, but then Astrocade took over and promised the addition). At any rate, Dr. DeFanti was contacted, and an arrangement was made for the use of the 32K Zgrass language. Jeff Frederiksen was then asked to assist in the project. The combined talents of these gentlemen have produced the item of hardware whose specifications you have just read.

This letter is being sent to all of those ARCADIAN subscribers who ever indicated some interest in the memory addition. By returning the order form, you will receive your unit at the earliest possible time, and at the best available price. The list price for the unit will be set at the end of this month - August - and it will be commensurate with the features included. This list price is expected to be on the order of that which has been discussed many times. Since the product is not now available, we are taking deposits only on the following basis... Send a check, money order, Visa or MasterCard data for \$50, using the enclosed order form. This money will be held without cashing until the actual price has been determined. At that time we will notify you, giving you the opportunity to change your mind. We will return your deposit if you so desire, or cash the deposit. When the delivery date has been selected, we will contact you for the additional money.

ALSO NOW AVAILABLE, 3 PLUG-IN CARTRIDGES

TREASURE COVE A mild little thriller requiring you to collect treasures from the bottom of the sea, while avoiding the denizens of the deep.

BLASTDROIDS An exciting asteroid-type laser shoot-em-up that requires more dexterity and skill than the original.

MUNCHER The P-C M-N thing that Bally/Astrocade never brought out...

AND You should be finding Astrocade's SOLAR CONQUEROR and COSMIC RAIDERS at your favorite dealer of Astrocade products.

DATE: _____

TO USE ☐ VISA OR ☐ MASTERCHARGE

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EXPIRATION DATE

□ □ □ □

M/C-BANK NUMBER

□ □ □ □ □

SIGNATURE AS ON CARD: _____

• Each of the above three cartridges is \$30, postpaid (CAN \$36). Canadian orders can be filled using Canadian currency - make checks out to Robert Fabris. California customers please add \$1.92 tax.